

What Is Claimed Is:

Sub 2

1. A liquid cooler comprising:  
a hollow tubing having an outer wall and a hollow  
circular inner portion, said outer wall having a  
5 circular inner wall portion; and  
a first structure contained within said hollow  
tubing, said first structure functioning to limit the  
temperature rise on said outer wall by distorting the  
laminar flow of a fluid flowing along a center portion  
10 of said hollow circular inner portion, said center  
portion defined by a reference line located equidistant  
from said circular inner wall portion of said outer  
wall.
2. The liquid cooler of claim 1, wherein said  
15 first structure comprises a baffle wire, said baffle  
wire having a straight wire region interposed between  
each two adjacent of at least two kink regions, each of  
said at least two kink regions having a lobe region  
abutting said circular inner wall portion, wherein said  
20 lobe regions serve to locate said straight wire region  
along said center portion.
3. The liquid cooler of claim 2, wherein the  
length of each of said straight wire regions is equal.
4. The liquid cooler of claim 2, wherein at  
25 least two of said at least two kink regions are used to  
locate said straight wire region within said center  
portion.
5. The liquid cooler of claim 4, wherein at  
least one of said at least two kink regions is not co-

planar with respect to another of said at least two kink regions.

6. The liquid cooler of claim 1, wherein said first structure is an elongated ridge member secured to said circular inner wall portion of said hollow tubing.

7. The cooling system of claim 6, wherein said elongated ridge member comprises an aluminum alloy elongated ridge member.

8. A cooling system comprising:  
a first component selected from the group consisting of a vehicle component and a system component;  
a liquid cooler coupled to said first component, said liquid cooler comprising a hollow tubing and a first structure, wherein said first structure is contained within a wall of said hollow tubing and functions to limit the temperature rise of along said wall by distorting the laminar flow of a liquid flowing through a center portion of said hollow circular inner portion, said center portion defined by a reference line located equidistant within a circular inner wall portion of said wall.

9. The cooling system of claim 8, wherein said first structure comprises a baffle wire, said baffle wire having a straight wire region interposed between each two adjacent of at least two kink regions, each of said at least two kink regions having a lobe region abutting said circular inner wall portion, wherein said lobe regions serve to locate said straight wire region along said center portion.

10. The cooling system of claim 8, wherein said first structure is an elongated ridge member having a pair of end regions and a middle portion, wherein said pair of end regions are secured at a first location on said circular inner wall portion and wherein said middle portion extends to said center portion.

11. The cooling system of claim 10, wherein said liquid cooler has a thermal interface portion, said thermal interface portion being coupled to said outer wall at a position nearest to said first location and being coupled to said first component.

12. The cooling system of claim 11, wherein a layer of a first substance is placed between said thermal interface plate and said first component, said first substance capable of enhancing the heat transfer capabilities between said first component and said liquid cooler, wherein said first substance is selected from the group consisting of a thermal grease, a thermal adhesive, and a film interposer.

13. The cooling system of claim 8, wherein said vehicle component is an electronic control module.

14. The cooling system of claim 8, wherein said liquid is selected from the group consisting of diesel fuel, gasoline, water-mix engine coolant, and motor oil.

15. A method for improving the cooling capabilities of a liquid cooler coupled to a vehicle or system component, the method comprising the step of:

decreasing the temperature rise along an outer surface of a hollow tubing resulting from the laminar flow of a liquid through said hollow tubing.

16. The method of claim 15, wherein the step of decreasing the temperature rise along an outer surface of a hollow tubing resulting from the laminar flow of a liquid through said hollow tubing comprises the step of distorting the laminar flow of a liquid flowing through a center portion of a hollow tubing.

17. The method of claim 16, wherein the step of distorting the laminar flow of a liquid flowing through a center portion of a hollow tubing comprises the step of introducing a first structure within a hollow tubing of the liquid cooler, said first structure used to distort the laminar flow of a liquid flowing through a center portion of said hollow tubing.

18. The method of claim 16, wherein the step of distorting the laminar flow of a liquid flowing through a center portion of a hollow tubing comprises the step of introducing a first structure within said hollow tubing of the liquid cooler, said first structure used to distort the laminar flow of a liquid flowing through a center portion of said hollow tubing and to increase the surface area within said hollow tubing.

19. The method of claim 17, wherein the step of introducing a first structure comprises the step of introducing a baffle wire within said hollow tubing of the liquid cooler, said baffle wire having a straight wire region interposed between each two adjacent of at least two kink regions, each of said at least two

kink regions having a lobe region abutting said circular inner wall portion, wherein said lobe regions serve to locate said straight wire region along said center portion, wherein said straight wire region  
5 distorts the laminar flow of a liquid flowing through said center portion of said hollow tubing.

20. The method of claim 18, wherein the step of introducing a first structure comprises the step of introducing an elongated ridge member to a first  
10 location on a circular inner wall portion of said hollow tubing, wherein said elongated ridge member has a pair of end regions secured at said first location and a middle portion extending to said center portion, wherein said first location is in closest proximity  
15 with a thermal interface portion of said liquid cooler.